centrifugations at slow speed then removed nuclei, blood corpuscles, and connective tissues. They then centrifuged the remaining supernatant at higher speeds for longer periods, which caused mitochondria to sediment. Bensley and Hoerr's goal was to analyze their chemical constitution. Although they expressed doubt in their first paper about the fat composition of mitochondria (Bensley & Hoerr, 1934a), their second paper showed mitochondria to be comprised of, on average, 43.6% fat by weight, but not to contain lecithin or cephalin (Bensley & Hoerr, 1934b). They also showed that precipitation at different acidities revealed the presence of least two proteins.

In further research, Hoerr (1943) refined the techniques for isolating cell components and Bensley (1937) refined the analysis of the constitution of mitochondria. Arnold Lazarow, another of Bensley's students, continued the chemical analysis of the constitution of mitochondria and also discovered a smaller particle that appeared cherry red when separated by centrifugation. He produced quantitative analyses of both the original and smaller particles, showing that the smaller particle contained more phosphorus and fat than did the mitochondrial particles. He demonstrated that both the mitochondrial fraction and the smaller particle (which he referred to as *the submicroscopic lipoprotein component*) oxidized succinic acid, which he interpreted as showing that both contained succinic dehydrogenase, cytochrome *c*, and cytochrome oxidase. Lazarow's smaller particles were in fact the ones Claude was finding at the same time and misidentifying as mitochondria. He also investigated their enzyme constitution several years before that became a focus in Claude's laboratory at the Rockefeller Institute. With regard to the submicroscopic lipoprotein component, Bensley commented on their common timing:

> I had no suspicion at first that still smaller particulates were present in the liver cell until Lazarow, by long-continued centrifugation, obtained a glassy cherry-red pellet composed of particles so minute that they were quite invisible under the microscope, but showed in the dark-field of the cardioid condenser a shimmering field of light in which individual particles could with

is found in the previous paper, also coauthored by Bensley and Hoerr, in which emulsions of fresh liver cells prepared by three different methods – grinding in a mortar, mincing in a latapie grinding machine, or kneading through bolting silk – were used to provide a check on results from freeze-drying. Their focus in that paper was on contents that remained once the nucleus and (putative) mitochondria were removed. They argued for the existence of a protein structure they dubbed "elipsin" which "by itself maintains the cell as a unit of organic structure after the soluble globulins, mitochondria, and chromatin have been removed seriatim by solution [and] is in reality the basis of the microscopic structure and of the organic continuity of the cell body" (Bensley & Hoerr, 1934a, p. 263).